**Module 4 – Installation and Maintenance of Hardware and Its components**

• **What is troubleshooting?**

**Ans.** Troubleshooting is the process of identifying, diagnosing, and resolving problems or issues that may arise in various systems, devices, or processes. It involves systematic problem-solving to find the root cause of a problem and implement effective solutions, often in technical or mechanical contexts. In a broader sense, troubleshooting requires critical thinking and problem-solving skills to address challenges and restore functionality.

• **Do a practical to change the administrator account forge password.**

**Ans.**  **1.** Open the Windows Start menu.

**2.** Then select Settings.

**3.** Then click on Accounts.

**4.** Next, click on Your info.

**5.** Click on Manage my Microsoft Account.

**6.** Then click More actions.

**7.** Next, click Edit profile from the drop-down menu.

**8.** Then click change your password.

• **How do you troubleshoot a computer with no display on screen?**

**Ans.** Here are some basic steps to troubleshoot a computer with no display:

1. **Check connections:**

Ensure that the monitor is properly connected to both the computer and power source.

Verify that cables are securely plugged in.

1. **Monitor and computer power:**

Confirm that the monitor and computer are powered on.

Check for any indicator lights on the monitor and computer.

1. Restart the computer:

Try restarting the computer to see if the issue resolves.

1. **Check for loose components:**

Ensure that the RAM, graphics card, and other internal components are securely seated in their respective slots.

1. **Test with another monitor or cable:**

Use a different monitor or cable to eliminate potential issues with the display or connecting cables.

1. **Boot into safe mode:**

Restart the computer and boot into safe mode to check if the issue is related to a driver problem.

1. **Listen for startup sounds:**

If the computer makes normal startup sounds, the issue may be with the display rather than the computer itself.

1. **Check for hardware issues:**

Test components individually, such as trying a different RAM stick or graphics card if possible.

1. **Inspect for visible damage:**

Examine the computer and monitor for any physical damage that may affect functionality.

1. **Consult technical support:**

If the issue persists, consider contacting technical support or a professional technician for further assistance.

• **You get the blue screen of death?**

**Ans.** If you encounter the "Blue Screen of Death" (BSOD) on your computer:

1. **Note Error Code:**

Observe any error codes or messages displayed on the blue screen.

1. **Restart Computer:**

Try restarting the computer to see if the issue resolves.

1. **Check for Hardware Changes:**

If you recently added new hardware, remove it and see if the problem persists.

1. **Update Drivers:**

Ensure that device drivers are up to date, especially for graphics and chipset.

1. **Boot in Safe Mode:**

Boot into Safe Mode to troubleshoot potential driver or software issues.

1. **System Restore:**

Consider using System Restore to revert the system to a previous working state.

1. **Check for Disk Errors:**

Use built-in tools like CHKDSK to check for and repair disk errors.

1. **Memory Test:**

Run a memory diagnostic test to check for RAM issues.

1. **Scan for Malware:**

Perform a malware scan using reputable antivirus software.

1. **Consult Technical Support:**

If the issue persists, seek assistance from technical support or a knowledgeable professional.

**• Do a practical to repair OS.**

**Ans.** Repairing an operating system can involve various steps depending on the issue. Here's a general guide for Windows operating systems:

1. Restart in Safe Mode:

Restart your computer and boot into Safe Mode to troubleshoot potential software conflicts.

1. Run System File Checker (SFC):

Open Command Prompt as an administrator.

Type sfc /scannow and press Enter to check and repair system files.

1. Use DISM (Deployment Image Service and Management Tool):

Open Command Prompt as an administrator.

Type DISM /Online /Cleanup-Image /RestoreHealth and press Enter.

1. Check Disk Utility:

Open Command Prompt as an administrator.

Type chkdsk /f and press Enter to check and fix disk errors.

1. Perform a System Restore:

If you have a restore point, use System Restore to revert your system to a previous state.

1. Repair Windows Boot Loader:

Use the Windows installation media to access the Command Prompt.

Type bootrec /rebuildbcd and press Enter.

1. Reinstall or Repair Drivers:

Update or reinstall drivers, especially for critical components like graphics and network adapters.

1. Check for Malware:

Run a thorough antivirus or antimalware scan to ensure your system is not compromised.

1. Reinstall Windows Updates:

If an update caused issues, uninstall recent updates and reinstall them one by one.

1. Perform a Repair Install (In-place Upgrade):

Use the Windows installation media to perform an in-place upgrade to repair the OS without losing data.

• **Do a practical to repair boot file**.

**Ans.**  Repairing the boot files on a Windows system can be done using the Bootrec tool. Here's a short guide:

1. Boot from Windows Installation Media:

Insert the Windows installation USB or DVD and restart your computer.

Boot from the installation media.

1. Access Command Prompt:

When the Windows installation screen appears, press Shift + F10 to open the Command Prompt.

1. Identify System Drive:

Type disk part and press Enter.

Then, type list volume to identify the drive letter assigned to your Windows partition.

1. Run Bootrec Commands:

Type the following commands one by one, replacing C: with your actual system drive letter:

**bash**

**Copy code**

**chkdsk /f C:**

**bootrec /scanos**

**bootrec /rebuildbcd**

**bootrec /fixmbr**

**bootrec /fixboot**

1. Exit Command Prompt:

Type exit and press Enter to close the Command Prompt.

1. Restart:

Remove the installation media and restart your computer.

These commands check and repair the file system, scan for Windows installations, rebuild the Boot Configuration Data (BCD), fix the Master Boot Record (MBR), and repair the boot sector.

Remember to replace C: with the actual drive letter of your Windows installation. If you're uncertain or uncomfortable with these steps, consider seeking assistance from someone with experience in troubleshooting or a professional technician.

• **DO a practical to recover deleted file.**

**Ans.** If you've accidentally deleted a file, you can try these steps to recover it on a Windows system:

**Check the Recycle Bin:**

Open the Recycle Bin on your desktop.

Locate and right-click on the deleted file.

Choose "Restore" to return the file to its original location.

**Use File History (Windows 10/11):**

Open the folder where the file was located.

Click on the "History" button in the menu bar.

Browse through the previous versions and restore the file.

**Restore from Backup:**

If you have a backup system in place, restore the file from your backup.

**Recover with File Recovery Software:**

Use third-party file recovery software like Recuva, EaseUS Data Recovery Wizard, or Disk Drill.

Install the software and follow the instructions to scan for and recover deleted files.

**Check Cloud Storage:**

If the file was stored in cloud storage (e.g., Google Drive, Dropbox), check the cloud service's recycle bin or version history.

**Restore from Previous Versions:**

Right-click on the folder containing the deleted file.

Select "Restore previous versions" and choose a version with the file intact.

• **Do a practical to recover the formatted file**.

**Ans.** Recovering files from a formatted drive can be challenging, and success depends on various factors, including the extent of data overwriting. Here's a basic guide:

1. Stop Using the Drive:

Stop using the formatted drive immediately to prevent further data overwriting.

1. Use File Recovery Software:

Download and install a reliable file recovery tool like Recuva, EaseUS Data Recovery Wizard, or Disk Drill.

Run the software and select the formatted drive as the target for scanning.

1. Scan for Lost Files:

Perform a deep scan to search for lost files on the formatted drive.

1. Preview and Recover:

Once the scan is complete, preview the recoverable files.

Select the files you want to recover and initiate the recovery process.

1. Save Recovered Files to a Different Drive:

Save the recovered files to a different drive to avoid overwriting data on the formatted drive.

1. Consider Professional Data Recovery Services:

If the file recovery software does not retrieve the desired files, consider professional data recovery services.

• **Do practical to recover data from the os Corrupted file.**

**Ans.**

**Create a Bootable USB:**

Create a bootable USB drive with a live operating system (e.g., Ubuntu or a rescue disk).

**Boot from USB:**

Insert the bootable USB and restart your computer.

Boot from the USB drive to access the live operating system.

**Access Files:**

Navigate to the drive containing your corrupted operating system.

Locate and copy the important files to an external drive.

**Reinstall or Repair OS:**

After saving your important files, consider reinstalling or repairing the operating system to resolve the corruption issue.

**Seek Professional Help:**

If you're unable to recover the data on your own, consider seeking assistance from a professional data recovery

service.

**• What is the basic troubleshooting for printer?**

**Ans.** Basic troubleshooting steps for printers:

1. **Check Power and Connections:**

Ensure the printer is powered on and connected to both the computer and a power source.

1. **Inspect Paper and Ink/Toner:**

Verify that there is enough paper in the tray and sufficient ink or toner in the cartridges.

1. **Restart the Printer:**

Turn the printer off, wait for a few seconds, and then turn it back on.

1. **Check Print Queue:**

Clear any print jobs in the print queue that might be causing a delay.

1. **Update or Reinstall Drivers:**

Ensure that the printer drivers are up to date. Consider reinstalling them if issues persist.

1. **Run Troubleshooters:**

Use the built-in troubleshooting tools provided by the operating system to identify and fix common printer problems.

1. **Inspect for Paper Jams:**

Look for and clear any paper jams inside the printer.

1. **Verify Network Connection:**

If the printer is networked, check the network connection and restart the router if needed.

1. **Check for Error Messages:**

Look for error messages on the printer display or computer screen and address any specific issues indicated.

1. **Consult Printer Manual:**

Refer to the printer's manual for specific troubleshooting guidance.

• **What are the basic troubleshooting for laptop? check the laptop which is not starting up practical to disassemble the laptop and change the corrupted ram practical to change the cartridge of the printer.**

**Ans**. Basic Laptop Troubleshooting (Not Starting Up):

1. **Check Power Connection:**

Ensure the laptop is connected to a power source and the battery is charged.

1. **Power Cycle:**

Disconnect the power source, remove the battery (if possible), and hold the power button for 15 seconds. Reconnect and try starting.

1. **External Devices:**

Disconnect external devices and peripherals; try starting without them.

1. **RAM Reseat:**

Reseat the RAM modules by removing and reinstalling them.

1. **Check for Display Issues:**

Connect an external monitor to check if the laptop is booting but not displaying.

1. **Boot into Safe Mode:**

If possible, try booting into Safe Mode to troubleshoot potential software issues.

1. **Run Built-in Diagnostics:**

Use the laptop's built-in diagnostics (often accessible during startup) to check for hardware problems.

1. **Recovery Options:**

Boot from a recovery drive or installation media to repair or reinstall the operating system.

**Practical to Disassemble and Change Corrupted RAM (Assuming Basic Knowledge):**

1. **Power Off:**

Turn off the laptop and disconnect the power source.

1. **Remove Battery (if applicable):**

If the laptop has a removable battery, take it out.

1. **Access RAM Compartment:**

Open the access panel on the bottom of the laptop to locate the RAM modules.

1. **Release RAM Clips:**

On each side of the RAM module, gently push the retaining clips outward to release the module.

1. **Remove and Replace RAM:**

Carefully remove the corrupted RAM module and replace it with a new one.

1. **Secure Clips:**

Press down on the module until the retaining clips securely lock it in place.

1. **Reassemble:**

Put back the access panel, insert the battery (if removed), and power on the laptop.

**Practical to Change Printer Cartridge (Assuming Inkjet Printer):**

1. **Turn Off Printer:**

Power off the printer and open the cartridge access door.

1. **Remove Old Cartridge:**

Release the old cartridge by lifting the cartridge access lid or following the printer's instructions.

1. **Unpack New Cartridge:**

Take the new cartridge out of its packaging and remove any protective tapes or covers.

1. **Insert New Cartridge:**

Slide the new cartridge into the correct slot, ensuring it clicks into place.

1. **Secure Cartridge Access Door:**

Close the cartridge access door securely.

1. **Power On Printer:**

Turn on the printer and allow it to align and initialize the new cartridge.